REMARKS

STATUS OF THE CLAIMS

In accordance with the foregoing, claims 1, 3, 4, 7, 10, 11, 12, 14, 17, and 18 have been amended. Claim 2 has been cancelled. Claims 1 and 3-18 are pending and under consideration.

No new matter is being presented, and approval of the amended claims is respectfully requested.

REJECTIONS OF CLAIMS 1, 13 AND 14 UNDER 35 U.S.C. §102(a) AS BEING ANTICIPATED BY "AAPA"

The rejections of claims 1, 13 and 14 are respectfully traversed and reconsideration is requested.

Independent claim 1, for example is amended herein to substantially include features originally recited in dependent claim 2, which is cancelled herein. Thus, independent claim 1 recites a storing unit which stores environment data setting a boot from said plurality of devices, said environment data includes first variable data including device setting data designating a boot candidate for said plurality of devices, second variable data including index data designating a boot device based on said device setting data, and third variable data in which a binary value indicating whether said multiplexing is valid or not is set; and a boot control unit which decides on a boot device based on the setting of said first variable data, said second variable data and said third variable data included in said environment data and starting up said operating system stored in said boot device.

In addition, the control unit changes the setting of variable data included in the environment data and controls switching to another device when an abnormality is detected in the boot device.

According to embodiments of the present invention, assuming that the system is multiplexed with a boot device of a master system and a boot device of a slave system, when the apparatus fails to boot the boot device of the master system, the boot device of the slave system is always booted in the next boot. In addition, when the boot device of the master system is booted successfully, the boot device of the master system is booted the next time.

Moreover, according to embodiments of the present invention, in a system that is multiplexed with a plurality of boot devices in which an operating system is stored in each of the respective boot devices, since a boot firmware of the boot control unit cooperates with operating system read out from a boot device selected from the multiplexed boot device, for example, when an abnormality is detected in the boot device, another boot device selected from the multiplexed boot devices is booted by the boot control unit the next time.

"AAPA" is cited as disclosing the features of original independent claim 1, and Lee et al. (hereinafter "Lee") is cited as disclosing the features of dependent claim 2, which are essentially incorporate into the independent claims.

Lee, however, discloses a computer system that comprises a plurality of boot devices which store a boot image, a processor connected to a memory and a controller controlling the plurality of boot devices and booting one of the plurality of boot devices. (See Lee, Fig. 1 and column 3, lines 10-57).

The Examiner states that since "storing unit" and "boot control unit", as described by the present application, correspond respectively to "nonvolatile memory 110" and "processor 106 and controller 108" of Lee, the operations of the "control unit" and "boot control unit" fall under block 210-260 of the flowchart shown in Fig. 2 of Lee. The Examiner further states that "first variable data", "second variable data" and "third variable data", which are included in the environment data, as recited in independent claim 1, for example, correspond respectively to "boot image select software task (BISST) 118", "list of boot device 114" and "selected boot device identifier data (SBDID) 120" stored in the nonvolatile memory 110 described in Lee. However, the computer system can boot from a number of boot devices through 102-N (e.g., a floppy disk, a hard disk, a CD-ROM and the like). (See Lee column 3, lines 12-14).

Thus, according to this description provided in Lee, the boot devices of the computer system to be booted do not have an operating system.

Although the computer system of Lee is multiplexed by the plurality of boot devices, operating systems for starting up the system are not multiplexed. Further, the computer system is not started up using the operating system installed in the boot device selected from the multiplexed boot devices, as recited in independent claim 1, for example.

In contrast, Lee discloses that the selection of the image to boot from can be simply rotated amongst all available boot images in a round robin fashion, or it may be a random choice amongst the available boot images. (See Lee. Column 4, lines 5-9).

Accordingly, the boot device booted, as taught by Lee, differs from the boot device booted the last time. Since boot devices booted at every boot time are different, the controller of the computer system cannot distinguish the boot device booted this time from the boot device booted last time. As a result, the controller cannot identify which boot devices are booted.

Therefore, it is respectfully submitted that the first, second and third variable data stored in the storing unit, as recited in independent claim 1, for example, differ from "boot image select software (BISST) 118", "list of boot device 114" and "selected boot device identifier data (SBDID) 120" stored in the nonvolatile memory 110 of the computer system described in Lee.

Therefore, it is respectfully submitted that independent claim 1 patentably distinguishes over the cited references. Claims 13 and 14 depend from independent claim 1 and, thus, it is further submitted that dependent claims 13 and 14 also patentably distinguish over the cited art.

Further dependent claim 14 is amended herein to clarify that the control unit executes controlling multiplexing of said plurality of devices based on system software read out from said boot device and stored in said storing unit, said system software checks multiplexing of the plurality of devices in the system, and processes switching said boot device to another device when an abnormality has occurred in said boot device. It is respectfully submitted that the prior art fails to teach or suggest the features of dependent claim 14.

REJECTIONS OF CLAIMS 2, 3, 7, 8, 9, 10, 11, 12, 15, 17 AND 18 UNDER 35 U.S.C. §102(a) AS BEING ANTICIPATED BY LEE ET AL. (U.S. PATENT NO. 6,754,818)

It is respectfully submitted that the rejection of dependent claims 2, 3, 7, 8-12 and 15 under 35 U.S.C. §102(a) is inappropriate, since these dependent claims incorporate all the features recited in independent claim 1.

However, as stated above, the features of claim 2 are substantially incorporated into independent claims 1, 17 and 18. As stated above, it is respectfully submitted that Lee fails to teach or suggest the features of independent claims 1, 17 and 18, for the reasons set for the above. Thus, it is further submitted that the pending dependent claims patentably distinguish over the prior art for at least the reasons provided herein.

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REJECTIONS OF CLAIMS 4-6 AND 16 UNDER 35 U.S.C. §103(a) AS BEING

UNPATENTABLE OVER LEE IN VIEW OF WU ET AL. (U.S. PATENT NO. 6,105,130)

Claims 4-6 and 16 depend from independent claim 1, which patentably distinguishes over the Lee for the reasons set forth herein.

Wu et al. discusses devices that include various drives which allow data to be written or read by the computer system to or from various media. For example, such devices include floppy drives, tape drives, hard drives, CD-ROMs, CD-R drives, scanners, and DVD drives among others. (See We et al., column 1, lines 21-25). Accordingly, the devices of the computer system described by Wu et al. suffer the same deficiencies as those described by Lee, since they also do not have an operating system.

Thus, it is further submitted that Wu et al. fails to cure the deficiencies of Lee and, thus, claims 4-6 and 16 patentably distinguish over the prior art.

CONCLUSION

In accordance with the foregoing, it is respectfully submitted that all outstanding objections and rejections have been overcome and/or rendered moot. Further, all pending claims patentably distinguish over the prior art. There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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